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EXAMINER	
LEE, JOHN J	

ART UNIT	PAPER NUMBER
2618	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/729,337	NANDA, SANJIV	
	Examiner	Art Unit	
	JOHN J. LEE	2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 December 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-34* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-25,27,28 and 30-34* is/are rejected.

7)☒ Claim(s) *26 and 29* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *04 March 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *5/31/2005*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 101

1. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

2. **Claim 34** is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Regarding **claim 34**: the limitation "A computer readable media embodying a program" is not patentable since the limitation does not fall under one of the statutory categories such that process, machine, manufacture or composition of matter.

The preamble of the claim 34 must start out as "A computer readable medium embodied with a computer program".

Double Patenting

3. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either

is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

4. Claims 1-3, 11, 14, 17-19, 27, 30, 33, and 34 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 6, 7, 10, 11, 13, 18, 19, 22, 23, 28, 30, 31, and 33 of copending Application No. 10/775,971. Although the conflicting claims are not identical, they are not patentably distinct from each other because claims 1, 6, 7, 10, 11, 13, 18, 19, 22, 23, 28, 30, 31, and 33 of copending Application No. 10/775,971 encompasses the limitations of claims 1-3, 11, 14, 17-19, 27, 30, 33, and 34 of instant application. Moreover, omission of a reference element whose function is not needed would be obvious to one of ordinary skill in the art. It is well settled that the omission of an element and its functions is an obvious expedient if the remaining elements performs the same function as before In re Karison, 163 USPQ 184 (CCPA 1963). Also note Ex parte Rainu, 168 uspq 375 (Bd. App. 1969).

More specifically, the independent claims 1, 13, 28, and 31 of the copending Application No. 10/775,971 is the same elements as claims 1, 17, 33, and 34 of the present application plus additional elements (scheduling a first signal transmission from the first transmitting terminal to an intermediate terminal, the first signal transmission being destined for the first receiving terminal) that is not claimed in the claims 1, 17, 33, and 34 of the present application.

Furthermore, the dependents claims 2, 3, 11, 14, 18, 19, 27, and 30 of the present application are the same elements as claims 6, 7, 10, 11, 18, 19, 22, 23, 30, and 33 of the copending Application No. 10/775,971.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. **Claims 1-13, 15-25, 27, 28, and 31-34** are rejected under 35 U.S.C. 103(a) as being unpatentable over Habetha (US 2003/0125066) in view of Kwan et al. (US 2003/0081692).

Regarding **claim 1**, Habetha teaches that a method of scheduling communications (page 1, paragraphs 4 – 8 and Fig. 1, where teaches a plurality of terminals exchange messages over a wireless medium that is self-organizing a plurality of sub-networks). Habetha teaches that selecting a plurality of terminal pairs (receiving and transmitting terminals) each having a transmitting terminal and a corresponding receiving terminal (pages 2, paragraphs 22-23 and Fig. 1, where teaches a communication between two terminals may therefore require the use of terminals, so that they can transmit messages or data between the two communicating terminals (transmitting and receiving terminals)).

Habetha teaches that determining a target quality parameter (receiving user signal-to-noise-power ratio (C/I) (according to specification, the carrier-to-interference ratio (C/I) see pages 8, paragraphs 39)) for each of the receiving terminals (pages 3, paragraphs 40, Fig. 6, and page 1, paragraphs 4 – 7, where teaches at a beginning of a transmission a modulation method is determined or selected respectively, by a transmitting terminal for selecting received-user-signal-to-noise-power ratio (C/I)). Habetha teaches that scheduling simultaneous (connection setting up controlling the signal transmission with synchronization) signal transmissions from each of the transmitting terminals to its corresponding receiving terminal (pages 3, paragraphs 32 – 33, Fig. 4, and pages 3, paragraphs 39, where teaches connection setting up controlling the signal transmission with synchronization from transmitting terminals to receiving terminal that a communication between two terminal may require the use of terminals, so that they can transmit messages or data between the two communicating terminals), the scheduling of the simultaneous transmissions (connection setting up controlling the signal transmission with synchronization) including selecting a power level (the necessary or optimum transmission power level is determined) for each of the signal transmissions that satisfies the target quality parameter (adapted based on power parameters) for each of the receiving terminals (pages 3, paragraphs 39 – pages 4, paragraphs 44 and Fig. 6, where teaches a connection between a transmitting terminal and a receiving terminal is set up controlling the signal transmission with synchronization for suitable transmission power level are determined adaptively).

Habetha does not exactly disclose the limitation "scheduling simultaneous signal transmission". However, Kwan supportly teaches the limitation "scheduling simultaneous signal transmission" (pages 7, paragraphs 76 – 77, Fig. 5, and pages 4, paragraphs 46, where teaches scheduling signal (channels) transmission with power levels for simultaneously signals transmitting from a transmitter and signals receiving to a receiver). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the Habetha's system as taught by Kwan, provide the motivation to optimize adapting modulation and coding and multi-code transmission for a radio link between transmitter and receiver in wireless communication network.

Regarding **claim 2**, Habetha and Kwan teach all the limitation, as discussed in claim 1. Furthermore, Habetha teaches that scheduling a different spreading code for each of the signal transmissions (pages 3, paragraphs 38 – 39 and Fig. 6, where teaches a setting up connection based on receiving condition and a suitable modulation codes (16 QAM, 64 QAM or the signals to be modulated are coded prior to the modulation) between a transmitting terminal and a receiving terminal for controlling the signal transmission with synchronization for suitable transmission power level are determined adaptively).

Regarding **claim 3**, Habetha teaches that the quality parameter comprises a carrier-to-interference ratio (pages 3, paragraphs 40 and Fig. 6, where teaches at a beginning of a transmission a modulation method is determined or selected respectively, by a transmitting terminal for determining quality parameter, selecting received-user-signal-to-noise-power ratio (C/I)).

Regarding **claim 4**, Habetha teaches that scheduling a data rate for each of the signal transmissions (Fig. 6 and pages 3, paragraphs 38 – pages 4, paragraphs 42, where teaches setting up a data rate for each coded modulation signal (see Fig. 6) in connection between transmitting and receiving terminal for transmission).

Regarding **claim 5**, Habetha teaches that the scheduled data rate for one of the signal transmissions from one of the transmitting terminals is used to determine the target quality parameter (receiving user signal-to-noise-power ratio (C/I)) at the corresponding receiving terminal (pages 4, paragraphs 42 – 45 and Fig. 6, where teaches setting up a data rate for each coded modulation signal (see Fig. 6) in connection between transmitting and receiving terminal for transmission and the transmitting terminal is used to selected the user receiving signal-to-noise-power ratio (C/I), such that the 16 QAM modulation method with a ¾ coding rate has been selected for the estimated received-user-signal-to-power ratio (target quality parameter) (C/I)).

Regarding **claim 6**, Habetha teaches that the scheduled data rate for the signal transmissions is a function of the type of service requested for each of the terminal pairs (page 1, paragraphs 9, Fig. 1, and pages 2, paragraphs 28, where teaches a terminal of sub-network is assigned transmission capacity (data rates) for data by the controller after the registration and after a transmission service request has been announced).

Regarding **claim 7**, Habetha does not exactly disclose the limitation "broadcasting the schedule to each of the terminal pairs". However, Kwan supportly teaches the limitation "broadcasting the schedule to each of the terminal pairs" (pages 4, paragraphs 42 and Fig. 5, where teaches a scheduling decision (setting up signal to noise power ratio,

date rate, and channel quality) is then broadcast to participating users, each transmitting terminal and receiving terminal). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the Habetha's system as taught by Kwan, provide the motivation to enhance controlling and notifying a setting up connection for transmission optimal adapting modulation and coding signal between transmitter and receiver in wireless communication network.

Regarding **claim 8**, Habetha does not exactly disclose the limitation "spreading the broadcast with a code". However, Kwan supportly teaches the limitation "spreading the broadcast with a code" (pages 4, paragraphs 42 - 44 and Fig. 5, where teaches a scheduling decision (setting up signal to noise power ratio, date rate, and channel quality to be modulated are coded to modulation) is then broadcast to participating users, each transmitting terminal and receiving terminal). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the Habetha's system as taught by Kwan, provide the motivation to enhance transmitting a modulation coded signal adaptability between transmitter and receiver in wireless communication network.

Regarding **claim 9**, Habetha teaches that the scheduling of the simultaneous transmissions is a function of path loss information from each of the transmitting terminals to each of the receiving terminals (pages 3, paragraphs 40 – pages 4, paragraphs 41 and Fig. 6, where teaches for the quality parameter is adapted during connection set up, the path losses are determined by the exchange of power control messages (pass loss information) between the transmitting terminal and the receiving terminal).

Regarding **claim 10**, Habetha teaches that receiving the path loss information from one or more of the terminals (pages 4, paragraphs 44 – 46 and Fig. 6, where teaches during the running connection there may be received variations of the path losses or received power, based on variations of the receiving conditions from terminals).

Regarding **claim 11**, Habetha teaches that the terminal pairs are selected from a piconet (sub-network) of terminals (page 1, paragraphs 21 – pages 2, paragraphs 22 and Fig. 1, where teaches a possible organization of an ad hoc network consists of the regular formation of sub-networks or clusters and a communication between two terminals may therefore require the use of terminals, so that they can transmit messages or data between the two communicating terminals (transmitting and receiving terminals).

Regarding **claim 12**, Habetha teaches that the scheduling of simultaneous transmissions is a function of path loss information from each of the transmitting terminals to each of the receiving terminals (pages 3, paragraphs 40 – pages 4, paragraphs 41 and Fig. 6, where teaches for the quality parameter is adapted during connection set up, the path losses are determined by the exchange of power control messages (pass loss information) simultaneously between the transmitting terminal and the receiving terminal).

Regarding **claim 13**, Habetha teaches that receiving the path loss information from one or more of the piconet (sub-network) terminals (pages 4, paragraphs 44 – 46 and Fig. 6, where teaches during the running connection there may be received variations of the path losses or received power, based on variations of the receiving conditions from

sub-network terminals as a possible organization of an ad hoc network consists of the regular formation of sub-networks or clusters).

Regarding **claim 15**, Habetha teaches that transmitting one of the scheduled signal transmissions to a corresponding one of the receiving terminals (pages 3, paragraphs 39 – pages 4, paragraphs 41 and Fig. 1, where teaches transmitting the power control messages (path losses, target received-user-signal-to-noise-power ratio (C/I)) to a corresponding receiving terminal).

Regarding **claim 16**, Habetha teaches that receiving one of the scheduled signal transmissions from a corresponding one of the transmitting terminals (pages 3, paragraphs 39 – pages 4, paragraphs 41 and Fig. 1, where teaches receiving the power control messages (path losses, target received-user-signal-to-noise-power ratio (C/I)) from a corresponding transmitting terminal).

Regarding **claim 17**, Habetha teaches that a communications terminal (page 1, paragraphs 4 – 8 and Fig. 1, where teaches a plurality of terminals exchange messages over a wireless medium that is self-organizing a plurality of sub-networks). Habetha teaches that a scheduler (controller) configured to select a plurality of terminal pairs (receiving and transmitting terminals) each having a transmitting terminal and a corresponding receiving terminal (pages 2, paragraphs 22-23 and Fig. 1, where teaches a communication between two terminals may therefore require the use of terminals by central controller, so that they can transmit messages or data between the two communicating terminals (transmitting and receiving terminals)). Habetha teaches that determine a target quality parameter (receiving user signal-to-noise-power ratio (C/I)

(according to specification, the carrier-to-interference ratio (C/I) see pages 8, paragraphs 39)) for each of the receiving terminals (pages 3, paragraphs 40, Fig. 6, and page 1, paragraphs 4 – 7, where teaches at a beginning of a transmission a modulation method is determined or selected respectively, by a transmitting terminal for selecting received-user-signal-to-noise-power ratio (C/I)). Habetha teaches that schedule simultaneous (connection setting up controlling the signal transmission with synchronization) signal transmissions from each of the transmitting terminals to its corresponding receiving terminal (pages 3, paragraphs 32 – 33, Fig. 4, and pages 3, paragraphs 39, where teaches connection setting up controlling the signal transmission with synchronization from transmitting terminals to receiving terminal that a communication between two terminal may require the use of terminals, so that they can transmit messages or data between the two communicating terminals), the scheduling of the simultaneous transmissions (connection setting up controlling the signal transmission with synchronization) including selecting a power level (the necessary or optimum transmission power level is determined) for each of the signal transmissions that satisfies the target quality parameter (adapted based on power parameters) for each of the receiving terminals (pages 3, paragraphs 39 – pages 4, paragraphs 44 and Fig. 6, where teaches a connection between a transmitting terminal and a receiving terminal is set up controlling the signal transmission with synchronization for suitable transmission power level are determined adaptively).

Habetha does not exactly disclose the limitation "a scheduler configured scheduling simultaneous signal transmission". However, Kwan supportly teaches the limitation "a scheduler (scheduler/controller) configured scheduling simultaneous signal

transmission" (pages 7, paragraphs 76 – 77, Fig. 5, and pages 4, paragraphs 46, where teaches a scheduler configured scheduling signal (channels) transmission with power levels for simultaneously signals transmitting from a transmitter and signals receiving to a receiver). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the Habetha's system as taught by Kwan, provide the motivation to optimize adapting modulation and coding and multi-code transmission for a radio link between transmitter and receiver in wireless communication network.

Regarding **claim 18**, Habetha and Kwan teach all the limitation, as discussed in claim 1. Furthermore, Habetha teaches that scheduler (controller) is further configured to schedule a different spreading code for each of the signal transmissions (pages 3, paragraphs 38 – 39 and Fig. 6, where teaches a controller set up connection based on receiving condition and a suitable modulation codes (16 QAM, 64 QAM or the signals to be modulated are coded prior to the modulation) between a transmitting terminal and a receiving terminal for controlling the signal transmission with synchronization for suitable transmission power level are determined adaptively).

Regarding **claim 19**, Habetha teaches that the quality parameter comprises a carrier-to-interference ratio (pages 3, paragraphs 40 and Fig. 6, where teaches at a beginning of a transmission a modulation method is determined or selected respectively, by a transmitting terminal for determining quality parameter, selecting received-user-signal-to-noise-power ratio (C/I)).

Regarding **claim 20**, Habetha teaches that the scheduler (controller) is configured to schedule a data rate for each of the signal transmissions (Fig. 6 and pages 3,

paragraphs 38 – pages 4, paragraphs 42, where teaches setting up a data rate for each coded modulation signal (see Fig. 6) in connection between transmitting and receiving terminal for transmission).

Regarding **claim 21**, Habetha teaches that the scheduled data rate for one of the signal transmissions from one of the transmitting terminals is used to determine the target quality parameter (receiving user signal-to-noise-power ratio (C/I)) at the corresponding receiving terminal (pages 4, paragraphs 42 – 45 and Fig. 6, where teaches setting up a data rate for each coded modulation signal (see Fig. 6) in connection between transmitting and receiving terminal for transmission and the transmitting terminal is used to selected the user receiving signal-to-noise-power ratio (C/I), such that the 16 QAM modulation method with a ¾ coding rate has been selected for the estimated received-user-signal-to-power ratio (target quality parameter) (C/I)).

Regarding **claim 22**, Habetha teaches that the scheduled data rate for each of the signal transmissions is a function of the type of service requested for each of the terminal pairs (page 1, paragraphs 9, Fig. 1, and pages 2, paragraphs 28, where teaches a terminal of sub-network is assigned transmission capacity (data rates) for data by the controller after the registration and after a transmission service request has been announced).

Regarding **claim 23**, Habetha does not exactly disclose the limitation "transceiver configured broadcasting the schedule to each of the terminal pairs". However, Kwan supportly teaches the limitation "transceiver configured broadcasting the schedule to each of the terminal pairs" (pages 4, paragraphs 42 and Fig. 5, where teaches a scheduling decision (setting up signal to noise power ratio, date rate, and channel quality) is then

broadcast to participating users, each transmitting terminal and receiving terminal). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the Habetha's system as taught by Kwan, provide the motivation to enhance controlling and notifying a setting up connection for transmission optimal adapting modulation and coding signal between transmitter and receiver in wireless communication network.

Regarding **claim 24**, Habetha does not exactly disclose the limitation "signal processor configured spreading the broadcast with a code". However, Kwan supportly teaches the limitation "signal processor configured spreading the broadcast with a code" (pages 4, paragraphs 42 - 44 and Fig. 5, where teaches a scheduling decision (setting up signal to noise power ratio, date rate, and channel quality to be modulated are coded to modulation) is then broadcast to participating users, each transmitting terminal and receiving terminal). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the Habetha's system as taught by Kwan, provide the motivation to enhance transmitting a modulation coded signal adaptability between transmitter and receiver in wireless communication network.

Regarding **claim 25**, Habetha teaches that the scheduler is configured to schedule of the simultaneous transmissions as a function of path loss information from each of the transmitting terminals to each of the receiving terminals (pages 3, paragraphs 40 – pages 4, paragraphs 41 and Fig. 6, where teaches for the quality parameter is adapted during connection set up, the path losses are determined by the exchange of power control

messages (pass loss information) between the transmitting terminal and the receiving terminal).

Regarding **claim 27**, Habetha teaches that the scheduler is configured to select the terminal pairs from a piconet (sub-network) of terminals (page 1, paragraphs 21 – pages 2, paragraphs 22 and Fig. 1, where teaches a possible organization of an ad hoc network consists of the regular formation of sub-networks or clusters and a communication between two terminals may therefore require the use of terminals, so that they can transmit messages or data between the two communicating terminals (transmitting and receiving terminals).

Regarding **claim 28**, Habetha teaches that the scheduler is configured to schedule the simultaneous transmissions as a function of path loss information from each of the transmitting terminals to each of the receiving terminals (pages 3, paragraphs 40 – pages 4, paragraphs 41 and Fig. 6, where teaches for the quality parameter is adapted during connection set up, the path losses are determined by the exchange of power control messages (pass loss information) simultaneously between the transmitting terminal and the receiving terminal).

Regarding **claim 31**, Habetha teaches that transceiver configured to transmit one of the scheduled signal transmissions to a corresponding one of the receiving terminals (pages 3, paragraphs 39 – pages 4, paragraphs 41 and Fig. 1, where teaches transmitting the power control messages (path losses, target received-user-signal-to-noise-power ratio (C/I)) to a corresponding receiving terminal).

Regarding **claim 32**, Habetha teaches that transceiver configured to receive one of the scheduled signal transmissions from a corresponding one of the transmitting terminals (pages 3, paragraphs 39 – pages 4, paragraphs 41 and Fig. 1, where teaches receiving the power control messages (path losses, target received-user-signal-to-noise-power ratio (C/I)) from a corresponding transmitting terminal).

Regarding **claim 33**, Habetha teaches that a communication terminal (page 1, paragraphs 4 – 8 and Fig. 1, where teaches a plurality of terminals exchange messages over a wireless medium that is self-organizing a plurality of sub-networks). Habetha teaches that selecting a plurality of terminal pairs (receiving and transmitting terminals) each having a transmitting terminal and a corresponding receiving terminal (pages 2, paragraphs 22-23 and Fig. 1, where teaches a communication between two terminals may therefore require the use of terminals, so that they can transmit messages or data between the two communicating terminals (transmitting and receiving terminals)). Habetha teaches that determining a target quality parameter (receiving user signal-to-noise-power ratio (C/I) (according to specification, the carrier-to-interference ratio (C/I) see pages 8, paragraphs 39)) for each of the receiving terminals (pages 3, paragraphs 40, Fig. 6, and page 1, paragraphs 4 – 7, where teaches at a beginning of a transmission a modulation method is determined or selected respectively, by a transmitting terminal for selecting received-user-signal-to-noise-power ratio (C/I)). Habetha teaches that scheduling simultaneous (connection setting up controlling the signal transmission with synchronization) signal transmissions from each of the transmitting terminals to its corresponding receiving terminal (pages 3, paragraphs 32 – 33, Fig. 4, and pages 3,

paragraphs 39, where teaches connection setting up controlling the signal transmission with synchronization from transmitting terminals to receiving terminal that a communication between two terminal may require the use of terminals, so that they can transmit messages or data between the two communicating terminals), the scheduling of the simultaneous transmissions (connection setting up controlling the signal transmission with synchronization) including selecting a power level (the necessary or optimum transmission power level is determined) for each of the signal transmissions that satisfies the target quality parameter (adapted based on power parameters) for each of the receiving terminals (pages 3, paragraphs 39 – pages 4, paragraphs 44 and Fig. 6, where teaches a connection between a transmitting terminal and a receiving terminal is set up controlling the signal transmission with synchronization for suitable transmission power level are determined adaptively).

Habetha does not exactly disclose the limitation "scheduling simultaneous signal transmission". However, Kwan supportly teaches the limitation "scheduling simultaneous signal transmission" (pages 7, paragraphs 76 – 77, Fig. 5, and pages 4, paragraphs 46, where teaches scheduling signal (channels) transmission with power levels for simultaneously signals transmitting from a transmitter and signals receiving to a receiver). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the Habetha's system as taught by Kwan, provide the motivation to optimize adapting modulation and coding and multi-code transmission for a radio link between transmitter and receiver in wireless communication network.

Regarding **claim 34**, Habetha teaches that computer readable medium embodied with a computer program of instructions executable by a computer program to perform a method of scheduling communications (page 1, paragraphs 4 – 8 and Fig. 1, where teaches a plurality of terminals exchange messages over a wireless medium that is self-organizing a plurality of sub-networks). Habetha teaches that selecting a plurality of terminal pairs (receiving and transmitting terminals) each having a transmitting terminal and a corresponding receiving terminal (pages 2, paragraphs 22-23 and Fig. 1, where teaches a communication between two terminals may therefore require the use of terminals, so that they can transmit messages or data between the two communicating terminals (transmitting and receiving terminals)). Habetha teaches that determining a target quality parameter (receiving user signal-to-noise-power ratio (C/I) (according to specification, the carrier-to-interference ratio (C/I) see pages 8, paragraphs 39)) for each of the receiving terminals (pages 3, paragraphs 40, Fig. 6, and page 1, paragraphs 4 – 7, where teaches at a beginning of a transmission a modulation method is determined or selected respectively, by a transmitting terminal for selecting received-user-signal-to-noise-power ratio (C/I)). Habetha teaches that scheduling simultaneous (connection setting up controlling the signal transmission with synchronization) signal transmissions from each of the transmitting terminals to its corresponding receiving terminal (pages 3, paragraphs 32 – 33, Fig. 4, and pages 3, paragraphs 39, where teaches connection setting up controlling the signal transmission with synchronization from transmitting terminals to receiving terminal that a communication between two terminal may require the use of terminals, so that they can transmit messages or data between the two communicating

terminals), the scheduling of the simultaneous transmissions (connection setting up controlling the signal transmission with synchronization) including selecting a power level (the necessary or optimum transmission power level is determined) for each of the signal transmissions that satisfies the target quality parameter (adapted based on power parameters) for each of the receiving terminals (pages 3, paragraphs 39 – pages 4, paragraphs 44 and Fig. 6, where teaches a connection between a transmitting terminal and a receiving terminal is set up controlling the signal transmission with synchronization for suitable transmission power level are determined adaptively).

Habetha does not exactly disclose the limitation "scheduling simultaneous signal transmission". However, Kwan supportly teaches the limitation "scheduling simultaneous signal transmission" (pages 7, paragraphs 76 – 77, Fig. 5, and pages 4, paragraphs 46, where teaches scheduling signal (channels) transmission with power levels for simultaneously signals transmitting from a transmitter and signals receiving to a receiver). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the Habetha's system as taught by Kwan, provide the motivation to optimize adapting modulation and coding and multi-code transmission for a radio link between transmitter and receiver in wireless communication network.

7. **Claims 14 and 30** are rejected under 35 U.S.C. 103(a) as being unpatentable over Habetha in view of Kwan and in further view of Larsson et al. (US 2003/0161268).

Regarding **claims 14 and 30**, Habetha and Kwan do not specifically disclose the limitation "constructing a piconet topology map, and deriving at least a portion of the

path loss information from the piconet topology map". However, Larsson supportly teaches the limitation "constructing a piconet topology map, and deriving at least a portion of the path loss information from the piconet topology map" (pages 11, paragraphs 163 and Fig. 5, 6, where specially Fig. 5 teaches constructing a piconet topology map, and deriving to route the path loss information from a preliminary connection path setup in an exemplary wireless multihop network for a specific node pair and channel (piconet topology map)). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the Habetha and Kwan's system as taught by Larsson, provide the motivation to optimize adapting modulation and coding and multi-code transmission for a radio link between transmitters and receivers in wireless multihop network.

Allowable Subject Matter

8. Claims 26 and 29 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The prior art record fails to disclose the limitation "a transceiver configured to receive the path loss information from one or more of the terminals, and memory configured to store the received path loss information, and wherein the scheduler is configured with access to the memory"

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Moon et al. (US 2002/0136169) discloses Adaptive Modulation Method Radio Network Controller, and Mobile Communication System.

Hwang (US 2003/0231706) discloses Adaptive Modulation Coding System and Method in a Mobile Communication Network.

Information regarding...Patent Application Information Retrieval (PAIR) system... at 866-217-9197 (toll-free)."

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231
Or P.O. Box 1450
Alexandria VA 22313

or faxed (571) 273-8300, (for formal communications intended for entry)

Or: (703) 308-6606 (for informal or draft communications, please label "PROPOSED" or "DRAFT").

Hand-delivered responses should be brought to USPTO Headquarters, Alexandria, VA.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **John J. Lee** whose telephone number is **(571) 272-7880**. He can normally be reached Monday-Thursday and alternate Fridays from 8:30am-5:00 pm. If attempts to reach the examiner are unsuccessful, the examiner's supervisor, **Edward Urban**, can be reached on **(571) 272-7899**. Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-4700.

J.L
June 23, 2007

John J Lee